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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

Applicants: Bednorz et al.

Serial No.: 08/479,810

Filed: June 7, 1995

For: NEW SUPERCONDUCTIVE COMPOUNDS HAVING HIGH TRANSITION  
TEMPERATURE, METHODS FOR THEIR USE AND PREPARATION

Date January 22, 2007

Docket: YO987-074BZ

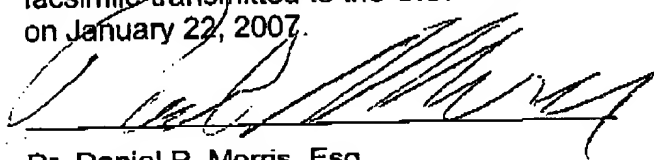
Group Art Unit: 1751

Examiner: M. Kopec

Commissioner for Patents  
United States Patent and Trademark Office  
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**CERTIFICATE OF FACSIMILE TRANSMISSION**

I hereby certify that this SECOND SUPPLEMENTARY APPEAL BRIEF is being  
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on January 22, 2007.



Dr. Daniel P. Morris, Esq.  
Reg. No. 32,053

**SECOND SUPPLEMENTARY  
APPEAL BRIEF**

Sir:

In addition to the arguments in the Brief submitted on 11/27/2006 and the  
First Supplementary Brief submitted on 12/21/2006 Pursuant to 35 U.S.C. 134  
and 37 C.F.R. 41.37 Applicants add the following comments.

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## Supplementary Comments To

## Part VII

## CFR 37 §41.37(c)(1)(vii)

## Argument

## A

As listed at page 3 of the Brief Volume 1 many of applicants claims have been rejected as not enabled under 23 USC 112, first paragraph. In support of this view the Examiner has provided a number of arguments. The following list is a representative example of these statements.

1. the Examiner states at page 6 of Office Action dated 07/28/2004:  
Small changes in composition can result in dramatic changes in or loss of superconducting properties.
2. the Examiner states at page 6 of Office Action dated 07/28/2004:  
In particular, the question arises: will any layered perovskite material exhibit superconductivity?
3. the Examiner states at page 4 of the Final Office Action that these claims have been rejected:  
because the specification, while being enabling for compositions comprising a transition metal oxide containing at least a) an alkaline earth element or Group IIA element and b) a rare-earth element or Group IIIB element, does not reasonably provide enablement for the invention as claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.
4. The Examiner states at page 8 of the Final Action:  
What is not a "matter of routine experimentation" in this complex, unpredictable art is arriving at superconductive compositions outside the scope of the allowable claims (e.g., subsequently

discovered BSOCO or TI-systems as disclosed in Rao (see response filed 3/8/05, pages 141-143). The Examiner respectfully maintains that the instant disclosure has not provided sufficient guidance to produce such materials.

5. The Examiner further states at page 14 of the Office Action of 07/28/2004:

The present specification discloses on its face that only certain oxide compositions of rare earth, alkaline earth, and transition metals made according to certain steps will superconduct at  $> 26^{\circ}\text{K}$ .

Applicants have extensively argued the applicability of the CCPA decision *In re Angstadt*, 537 F.2d 498, 190 USPQ 214 (C.C.P.A. 1976). As stated by Applicants at page 91 of the Brief Volume 1:

The Board in *Ex parte Jackson* further states at 217 USPQ 808 "The problem of enablement of processes carried out by microorganisms were uniquely different from the field of chemistry generally. Thus, we are convinced that such recent cases as *In re Angstadt* 537 F.2d 498, 190 USPQ 214 (CCPA 1976) and *In re Geerdes* 491 F.2d 1260, 180 USPQ 789 (CCPA 1974) are in apposite to this case." Therefore, since the present application is not directed to biotechnology or microorganism invention, the decision of *Ex parte Jackson* does not apply, but *In re Angstadt* and *In re Geerdes* do apply.

The CCPA states in *In re Angstadt*, 537 F.2d 498, 503-504 (C.C.P.A. 1976) 190 USPQ 214 citing the United States Supreme Court decision *Minerals Separation, Ltd. v. Hyde*, 242 U.S. 261, 270-71 (1916):

To require disclosures in patent applications to transcend the level of knowledge of those skilled in the art would stifle the disclosure of inventions in fields man understands imperfectly, like catalytic chemistry. The Supreme Court said it aptly in *Minerals Separation, Ltd. v. Hyde*, 242 U.S. 261, 270-71 (1916), in discussing the adequacy of the disclosure of the froth flotation process of ore separation:

**Equally untenable is the claim that the patent is invalid for the reason that the evidence shows that when different ores are**

**treated preliminary tests must be made to determine the amount of oil and the extent of agitation necessary in order to obtain the best results. Such variation of treatment must be within the scope of the claims, and the certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter. The composition of ores varies infinitely, each one presenting its special problem, and it is obviously impossible to specify in a patent the precise treatment which would be most successful and economical in each case. The process is one for dealing with a large class of substances and the range of treatment within the terms of the claims, while leaving something to the skill of persons applying the invention, is clearly sufficiently definite to guide those skilled in the art to its successful application, as the evidence abundantly shows. This satisfies the law. Mowry v. Whitney, 14 Wall. 620; Ives v. Hamilton, 92 U.S. 426, and Carnegie Steel Co. v. Cambria Iron Co., 185 U.S. 403, 436, 437 [Emphasis added.]**

The text in bold shall be referred herein to as The Supreme Court Minerals v. Hyde Enablement Statement.

In Minerals Separation, Ltd. v. Hyde Patent No. 835120 (Minerals Patent), issued November 6, 1906, was asserted by the plaintiff against the defendant's method. The claims of this patent are directed to improvements in the concentration of ores by a process of oil flotation. The defendant asserted that the claims were not enabled. The Supreme Court held that claims 1, 2, 3, 5, 6, 7 and 12 were valid. The reason for why these claims were found enabled is quoted above in bold from In re Angstadt. The bold text is referred to herein as the Supreme Court Minerals v. Hyde Enablement Statement. Claims 1 and 12 found enabled by the Supreme Court are:

1. The herein-described process of concentrating ores which consists in mixing the powdered ore with water, adding a small proportion of an oily liquid having a preferential affinity for metalliferous matter, [amounting to a fraction of one percent, on the ore), agitating the mixture until the oil-coated mineral matter forms into a froth, and separating the froth from the remainder by notation.

12. The process of concentrating powdered ore which consists in separating the minerals from gangue by coating the minerals with oil in water containing a fraction of one per cent, of oil on the ore, agitating the mixture to cause the oil-coated mineral to form a froth, and separating the froth from the remainder of the mixture.

The claims found enables are directed to "ores." The Supreme Court did not require the claims of the Minerals Patent to be limited to the ores that were recited in the patent. The claims include within their scope "ores" described in the patent, ores known by others and not described in the patent, ores not yet discovered and, moreover, would include within their scope an ore type materials that was not naturally occurring, but which could be made by man. The Supreme Court states as quoted above in the Supreme Court Minerals v. Hyde Enablement Statement "The composition of ores varies infinitely." The patent applicant was not required to describe the infinite variation of the ores in the patent to generically claim an ore and for this generic claim to be enabled for all ores. The only specific description in the Minerals Patent of an ore is at Col. 1, lines 10 – 12 which states "This invention relates to improvements in the concentration of ores, the object being to separate metalliferous matter, graphite, and the like from gangue by means of oils, fatty acids, or other substances which have a preferential affinity for metalliferous matter over gangue" and at Col. 2, lines 70 – 76, "The following is an example of the application of this invention to the concentration of a particular ore. An ore containing ferruginous blende, galena, and gangue consisting of quartz, rhodonite, and garnet is finely powdered and mixed with water containing a fraction of one per cent, or up to one per cent, of a mineral acid or acid salt, conveniently sulfuric acid or mine or other waters containing ferric sulfate." The reason given by the Supreme Court, as quoted above in The Supreme Court Minerals v. Hyde Enablement Statement, for why the generic claims covering an infinite number of species were enabled is "[t]he process is one for dealing with a large class of substances and the range of treatment within the terms of the claims, while leaving something to the skill of persons applying the invention, is clearly sufficiently definite to guide those

skilled in the art to its successful application, as the evidence abundantly shows. This satisfies the law." That there is a large class (infinite in number) of substances within the scope of the claim that may not be specifically described, and where the specification only describes a small number of preferred embodiments, does not render the claim not enabled. The Supreme Court clearly says "leaving something to the skill of persons applying the invention is clearly sufficiently definite to guide those skilled in the art to its successful application." Moreover, there is no certainty that the claimed method in the Materials Patent would work for every ore until it was experimentally determined to work for a particular ore. This did not render the claims not enabled. It is clear that the Supreme Court did not find that it was necessary to know what ores the process worked for in advance since this was experimentally determinable by techniques known to persons of skill in the art following the teaching in the Material Patent. Thus the patent applicant of the Minerals Patent was not required to foresee (or predict in the sense used by the Examiner of the present application) all species that came within the scope of the Minerals Patent claims. The same is true of the claims under appeal herein and rejected as not enabled.

Applicants have provided abundant evidence to show that persons of skill in the art know how to make species of materials that can be tested to determine if they have the high  $T_c$  property. The Examiner has acknowledged this at page 8 of the Final Action where the Examiner states:

The Examiner does not deny that the instant application includes "all know principles of ceramic science", or that once a person of skill in the art knows of a specific type of composition which is superconducting at greater than or equal to 26K, such a person of skill in the art, using the techniques described in the application, which included all principles of ceramic fabrication known at the time the application was initially filed, can make the known superconductive compositions. The numerous 1.132 declarations, such as those of Mitzi, Shaw, Dinger and Duncombe, and the Rao article, are directed to production of known superconductive materials. (Emphasis in the original)

This statement has been referred to in the Brief Volume 4 as the Examiner's First Enablement Statement. It is un rebutted that persons of skill in the art know how to test material to determine whether they have a  $T_c$  greater than or equal to 26 K.

It is clear from the Minerals Separation, Ltd. v. Hyde Patent Supreme Court decision that experimental determination of species that come within the scope of a claim satisfies the enablement requirement. This is clear as quoted above in The Supreme Court Minerals v. Hyde Enablement Statement in which the Supreme Court states "Equally untenable is the claim that the patent is invalid for the reason that the evidence shows that when different ores are treated preliminary tests must be made to determine the amount of oil and the extent of agitation necessary in order to obtain the best results. Such variation of treatment must be within the scope of the claims, and the certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter." It is clear from the evidence presented by Applicants that persons of skill in the art know how to make materials and test them for the high Tc property. With regard to this subject matter what the Examiner is requiring in the present application is unreasonable and beyond "the certainty which the law requires in patents." It is clear from the Supreme Court decision in Minerals Separation, Ltd. v. Hyde, 242 U.S. 261 that it is not necessary for the patent applicant to know in advance what materials ("ores" in the Minerals Separation Patent) the claimed process is applicable to and what the value of parameters (amount of oil and degree of agitation) are in advance. They can be experimentally determined. That the applicant had no theory to predict these parameters in advance of making these measurements does not render the claims not enabled. As stated in Volume 1 of the Brief the contemporary term of "predictable and unpredictable arts" in patent decisions does not mean "theoretical predictability" and does mean determinable by theory or experiment. In Minerals Separation, Ltd. v. Hyde, 242 U.S. 261 determinability is provided by experiment. The Supreme Court says this "is clearly sufficiently definite to guide those skilled in the art to its successful application..... This satisfies the law."

" Following the Supreme Court Minerals v. Hyde Enablement Statement Applicants' teaching "satisfies the law."

The CCPA in *In re Angstadt*, 537 F.2d 498, 503 (C.C.P.A. 1976) 190 USPQ 214 commenting on the dissent states:

The dissent's reliance on *In re Rainer*, 54 CCPA 1445, 377 F.2d 1006, 153 USPQ 802 (1967), is misplaced. If Rainer stands for the proposition that the disclosure must provide "guidance which will enable one skilled in the art to determine, with reasonable certainty before performing the reaction, whether the claimed product will be obtained" (emphasis in original), as the dissent claims, then all "experimentation" is "undue," since the term "experimentation" implies that the success of the particular activity is uncertain. Such a proposition is contrary to the basic policy of the Patent Act, which is to encourage disclosure of inventions and thereby to promote progress in the useful arts.

In the present application the Examiner's position (proposition) is requiring what the CCPA states is not required and "[s]uch a proposition is contrary to the basic policy of the Patent Act, which is to encourage disclosure of inventions and thereby to promote progress in the useful arts." The certainty that the Examiner is requiring is beyond what the Supreme Court requires and what the Patent Act requires.

The CCPA applies the Supreme Court *Minerals v. Hyde Enablement* Statement in *In re Bosy*, 53 C.C.P.A. 1231, 1234-1235 (C.C.P.A. 1966) 149 U.S.P.Q. (BNA) 789 stating:

The Supreme Court set out some guidelines with reference to the sufficiency of a specification to disclose an invention in such a manner as will enable one of ordinary skill in the art to make it in *Minerals Separation, Ltd. v. Hyde*, 242 U.S. 261 (1929), at 270-271: [Stating the Supreme Court *Minerals v. Hyde Enablement* statement quoted above.]

The CCPA also cite *Minerals Separation, Ltd. v. Hyde*, 242 U.S. 261 in *In re Corr*, 52 C.C.P.A. 1505, 1508 (C.C.P.A. 1965) 146 U.S.P.Q. (BNA) 69 and states "The certainty required in patents is not greater than that which is reasonable,

having regard to the subject matter involved. *Minerals Separation, Ltd. v. Hyde*, 242 U.S. 261." In re Hudson, 40 C.C.P.A. 1036, 1040 (C.C.P.A. 1953)

The CAFC adopted the Supreme Court *Minerals v. Hyde* Enablement Statement in *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, stating:

The district court invalidated both patents for indefiniteness because of its view that some "trial and error" would be needed to determine the "lower limits" of stretch rate above 10% per second at various temperatures above 35 degrees C. That was error. **Assuming some experimentation were needed, a patent is not invalid because of a need for experimentation. *Minerals Separation, Ltd. v. Hyde*, 242 U.S. 261, 270-71, 61 L. Ed. 286, 37 S. Ct. 82 (1916). A patent is invalid only when those skilled in the art are required to engage in undue experimentation to practice the invention. In re Angstadt, 537 F.2d 498, 503-04, 190 USPQ 214, 218 (CCPA 1976).** There was no evidence and the court made no finding that undue experimentation was required.

*W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1557 (Fed. Cir. 1983) 220 U.S.P.Q. (BNA) 303 (1983)  
(Emphasis added.)

The Examiner's reasons for finding Applicants' claims not enabled are inconsistent with the Supreme Court decision in *Minerals Separation, Ltd. v. Hyde*. For example considering the five specifically identified reasons listed above:

1. The Examiner states that "Small changes in composition can result in dramatic changes in or loss of superconducting properties. "
  - o It is the Supreme Court's position in *Minerals Separation, Ltd. v. Hyde* that such a position is untenable. The court states in *The Supreme Court Minerals v. Hyde* Enablement Statement quoted above "Equally untenable is the claim that the patent is invalid for the reason that the evidence shows that when different ores are treated preliminary tests must be made to determine the amount of

oil and the extent of agitation necessary in order to obtain the best results."

2. The Examiner states "In particular, the question arises: will any layered perovskite material exhibit superconductivity?"

- o It is the Supreme Court's position in *Minerals Separation, Ltd. v. Hyde* that such a position is untenable where it is experimentally determinable which layered perovskite material exhibits superconductivity. The court states in *The Supreme Court Minerals v. Hyde Enablement Statement* quoted above "The composition of ores varies infinitely, each one presenting its special problem, and it is obviously impossible to specify in a patent the precise treatment which would be most successful and economical in each case."

3. The Examiner states "because the specification, while being enabling for compositions comprising a transition metal oxide containing at least a) an alkaline earth element or Group IIA element and b) a rare-earth element or Group IIIB element, does not reasonably provide enablement for the invention as claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims."

- o It is the Supreme Court's position in *Minerals Separation, Ltd. v. Hyde* that such a position is untenable where it is experimentally determinable which material exhibits superconductivity. The court states in *The Supreme Court Minerals v. Hyde Enablement Statement* quoted above "The composition of ores varies infinitely, each one presenting its special problem, and it is obviously impossible

to specify in a patent the precise treatment which would be most successful and economical in each case."

4. The Examiner states "[w]hat is not a 'matter of routine experimentation' in this complex, unpredictable art is arriving at superconductive compositions outside the scope of the allowable claims .... The Examiner respectfully maintains that the instant disclosure has not provided sufficient guidance to produce such materials."

o Preliminarily, that the art of making high  $T_c$  materials is complex does not necessarily render generic claims not enabled since the skill of persons in this art is high. The Examiner acknowledges this in the Examiner's First Enablement Statement, quoted above. Thus the complexity is within the skill of the art. The Examiner's statement that the high  $T_c$  art is unpredictable is untenable in view of the Supreme Court's position in *Minerals Separation, Ltd. v. Hyde* that "[t]he process is one for dealing with a large class of substances and the range of treatment within the terms of the claims, while leaving something to the skill of persons applying the invention, is clearly sufficiently definite to guide those skilled in the art to its successful application, as the evidence abundantly shows." Since the Examiner's First Enablement Statement acknowledges that persons of skill in the art know how to make materials within the scope of Applicants' rejected claims and since it is un rebutted that they know how to test these materials for the high  $T_c$  property, Applicants' teaching "is clearly sufficiently definite to guide those skilled in the art to its successful application, as the evidence [submitted by Applicants] abundantly shows."

5. The Examiner states "[t]he present specification discloses on its face that only certain oxide compositions of rare earth, alkaline earth, and transition metals made according to certain steps will superconduct at  $> 26^{\circ}\text{K}$ ."
- o It is the Supreme Court's position in *Minerals Separation, Ltd. v. Hyde* that such a position is untenable where it is experimentally determinable which material exhibits superconductivity. As noted above the patent at issue in the *Minerals Separation, Ltd. v. Hyde* dispute described only a small number of examples but as noted in the Supreme Court *Minerals v. Hyde* Enablement Statement quoted above "[t]he **composition of ores varies infinitely**, each one presenting its special problem, and it is obviously impossible to specify in a patent the precise treatment which would be most successful and economical in each case. The process is one for dealing with a large class of substances and the range of treatment within the terms of the claims, while leaving something to the skill of persons applying the invention, is clearly sufficiently definite to guide those skilled in the art to its successful application, as the evidence abundantly shows." Thus the Supreme Court found enabled claims covering a composition that "varies infinitely" based on a description that describes a few examples where, as in the present application, it was within the skill of the art to apply the invention to other species in that infinite variety.

Applicants' arguments in the Brief support the position argued in this Second Supplementary Brief, in particular the following enablement statements described in Volume 3 of the Brief:

- Examiner's First Enablement Statement (also provided above)
- Examiner's Second Enablement Statement

- Examiner's Third Enablement Statement
- Poole 1988 Enablement Statement
- Poole 1995 Enablement Statement
- Poole 1996 Enablement Statement
- Schuller Enablement Statement
- Rao enablement Statement

and in the Examiner's Fourth Enablement Statement described in the First Supplementary Appeal Brief.

It is thus clear following the Supreme Court decision in *Minerals Separation, Ltd. v. Hyde*, 242 U.S. 261 that all of Applicants' claims are enabled and Applicants request that the Board reverse the rejections for lack of enablement.

## B

At page 32 of Volume 1 of the Brief in Preliminary Comment C and in greater detail starting at page 155 of Volume 1 of the Brief Applicants state quoting from page 155:

Claims 1, 12-31, 33-38, 40-46, 55-59, 64, 69-72, 77-81, 84-86, 91-96, 103, 109, 111-116, 119, 120 and 124 were rejected at page 16 of the Office Action dated July 30, 1998 as obvious over the Asahi Shinbum Article (Brief Attachment AV). Only claim 123 was allowed in that Office Action. (A similar rejection at page 10 of Office Action dated 05/27/97) Since this was a rejection for obviousness over a single reference, this means that a person of ordinary skill in the art, according to the Examiner, was enabled to practice the claimed inventions of the rejected claims from the teaching of the Asahi Shinbum article and what is generally known to a person of ordinary skill in the art. The claims rejected over the Asahi Shinbum Article were generic to the species of claims 123 allowed over the Asahi Shinbum Article. The Examiner's rejection of claims for lack of enablement is inconsistent with the obviousness rejection over the Asahi Shinbum Article. The Examiner states at page 17 of the Office Action dated 07/30/1998 and at page 11-12 of the Office Action dated 05/27/1997 "based on the teachings of Asahi Shinbum article as a whole, it would have been obvious to one of such skill because that reference teaches superconductivity in an oxide compound of La and Cu with Ba

having a structure of the so-called perovskite structure". In the Office Action dated 07/30/1998 claim 123 was allowed over the Asahi Shinbum article because it showed criticality of the formula recited in this claim. For a single reference to be prior art under 35 USC 102 or 103 it is subject to the statutory provisions of 35 USC 112, first paragraph, that is it must enable a person of skill in the art to practice the claimed invention it is alleged to anticipate or render obvious. By the Examiner stating that claim 123 was allowed because it showed criticality of the formula recited, the Examiner is stating that this is a patentably distinct species because of unexpected results of the genius of the Asahi Shinbum Article. (The genus of the Asahi Shinbum Article is Applicants' teaching.)

As stated in detail in the Brief Volume 1 the Examiner maintained the rejection for obviousness over the Asahi Shinbum article for many years and repeated the rejection many times. Applicants were required to get around the Asahi Shinbum article by swearing behind it by affidavit. Thus it is still the Examiner's view that the Asahi Shinbum article alone enables Applicants' claims rejected as not enabled. In Volume 1 of the Brief Applicants have described in detail why the Examiner's view necessarily requires a finding that the Examiner's rejection for obviousness of the same claims that have been rejected as not enabled is inconsistent and necessarily requires a finding that the Examiner's position requires a finding that Applicants' claims are enabled.

The United States Supreme Court was confronted with a similar situation in *Loom v Higgins* where the court stated:

A great deal of testimony was introduced by the defendants to show that the patentee had failed to describe his invention in such full, clear, and exact terms as to enable persons skilled in the art to construct and use it. It seems to us that the attempt has failed. ... But it stands confessed that the thing has been done, that is to say, the contrivance which Webster claims in his patent has been applied, and very successfully so, ... **If the thing could not be understood without the exercise of inventive power, it is a little strange that it should have been so easily adapted to the looms on which it has been used with such striking results.**

It is worthy of remark... that the defendants, in their answer,

state it as a fact, that prior to the alleged invention of Webster, looms containing lays having shuttle-boxes rigidly attached were publicly known and described in certain English patents... and that all the other ... were described in another English patent ... and they aver ... that the ... **use of the two things together... were obvious and ...well known, and constituted a part of the known state of the art. This averment in the answer... does not seem to tally very well with the allegation that Webster has failed to point out, in his patent, how to use and apply his invention, and that it requires further invention to use and apply it.**

Loom Co. v. Higgins, 105 U.S. 580, 587 (U.S. 1882)  
(Emphasis added.)

This will be referred to herein as the Supreme Court Loom v Higgins Enablement Statement. The Supreme Court is stating here that a finding of obviousness is inconsistent with a finding of lack of enablement. Consequently, as stated at page 161 of Volume 1 of the Brief "[i]n the present application the Examiner has never withdrawn the 35 USC 103 rejection over the Asahi Shinbum Article because it was found not to be a reference under 35 USC 102. Thus as stated above, in the present application the Examiner must necessarily be viewed as having made a finding of fact that Applicants claims are enabled."

Applicants submitted a great deal of evidence and testimony in the form of affidavits to show that the Applicants described their invention in such full, clear, and exact terms as to enable persons skilled in the art to make and use it. Particularly relevant, in view of the passage quoted above from Loom v. Higgins, is the Poole 1988 Enablement statement which is referred throughout the Brief Volume 1 and in Volume 3. Applicants at page 91 of Volume 3 state:

The chemistry involved in the process of making high Tc superconductor compositions does not have to be understood to fabricate samples as stated in the book "Copper Oxide Superconductors" by Charles P. Poole, et al. 1988 (See 48 of DST AFFIDAVITS (Brief Attachment AM, AN and AO and Brief Attachment AW) which states at page 59:

[c]opper oxide superconductors with a purity sufficient to exhibit zero resistivity or to demonstrate levitation (Early) are not difficult to synthesize. We believe that this is at least partially responsible for the explosive worldwide growth in these materials.

Poole further states at page 61:

[i]n this section three methods of preparation will be described, namely, the solid state, the coprecipitation, and the sol-gel techniques (Hatfi). The widely used solid-state technique permits off-the-shelf chemicals to be directly calcined into superconductors, and it requires little familiarity with the subtle physicochemical process involved in the transformation of a mixture of compounds into a superconductor.

Since skilled artisans can fabricate samples without knowing the chemistry and without a detailed theory thus this art is predictable. All that is needed is routine experimentation to fabricate samples. There is no evidence to the contrary. The Examiner has cited no evidence to the contrary and has presented no argument to the contrary. **This is the Poole 1988 Enablement Statement.**

The defendant in Loom v Higgins asserted that the patentee's claims were not enabled, that is, to practice those claims required, in the language of the Supreme Court, "the exercise of inventive power." In the Supreme Court Loom v Higgins Enablement Statement the court states in regards to the defendants assertion that the plaintiff's claims were not enabled "If the thing could not be understood without the exercise of inventive power, it is a little strange that it should have been so easily adapted to the looms on which it has been used with such striking results." In making this statement the court is relying on work done by persons other than the inventor that was done after the invention by the inventor. Thus Supreme Court is saying that where the facts show that an invention is readily implemented by others this is evidence that the claimed invention is enabled. The Poole 1988 Enablement Statement is stating that the inventions of the claims under appeal in the present application were readily implemented by others after knowing Applicants' discovery.

At page 143 of Volume 1 of the Brief Applicants note that the Examiner states at page 17 of Office Action dated 07/28/2004 referring to Poole 1988:

The applicants point to "Copper Oxide Superconductors" by Charles P. Pooler Jr., et al., (hereinafter, "the Poole article") as supporting their position that higher temperature superconductors were not that difficult to make after their original discovery.

Initially however, it should be noted that the Poole article was published after the priority date presently claimed. As such, it does not provide evidence of the state of the art at the time the presently claimed invention was made.

In view of the Supreme Court decision on Loom v. Higgins the Examiner's statement "[i]nitially however, it should be noted that the Poole article was published after the priority date presently claimed. As such, it does not provide evidence of the state of the art at the time the presently claimed invention was made" is untenable. The Examiner has made no attempt to show that what is described in Poole 1988 required "the exercise of inventive power" to apply Applicants teaching to determine other species of high  $T_c$  materials. Poole 1988 clearly states that these other species were "not difficult to synthesize" and the methods to make other examples "requires little familiarity with the subtle physicochemical process involved in the transformation of a mixture of compounds into a superconductor." Applying the Supreme Court Loom v Higgins Enablement Statement "[i]f the thing could not be understood without the exercise of inventive power, it is a little strange that it should have been so easily adapted to the looms on which it has been used with such striking results," "it is a little strange that [Applicants' teaching] should have been so easily adapted to [to make other species of high  $T_c$  materials] ...with such striking results" and so quickly after Applicants' discovery.


In view of the Supreme Court's decision in Loom v. Higgins Applicants request the Board to reverse the rejection of applicants' claims for lack of enablement.

C

In view of the remarks herein Applicants request that the Board reverse the rejections of Applicants' claims for lack of enablement.

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Respectfully submitted,

  
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